Analysis of Variance - final topics in the chapter

Higher-Way Analysis of Variance

The text next covers three-way ANOVA where there is a three-way interaction in addition to several two-way interactions. The ideas involved in defining constraints on parameters to obtain a full-rank model are similar to those for two-way ANOVA. Issues still need to be addressed about which approach is appropriate for calculating sums of squares, and in practice it is common to not neccesarily use all high-order interactions in a model. The text also illustrates some ways to display effects in higher-way ANOVA.

Empty Cells in Factorial ANOVA

An empty cell occurs in a factorial ANOVA model when one treatment combination has no observations. If a data set happens to have empty cells, a much more careful approach must be taken to analyze the data.

Analysis of Covariance

We have already discussed ANCOVA in Chapter 7 when discussing dummy variable regression.

Linear Contrasts of Means

Often we are interested in particular comparisons among treatment groups, this is most commonly seen when performing pairwise comparisons between groups. We can investigate non-pairwise comparisons as well. If we pick sets of comparisons that are orthogonal and if the design is balanced, we can use a set of linear contrasts to decompose the ANOVA sums of squares in a very interesting way.